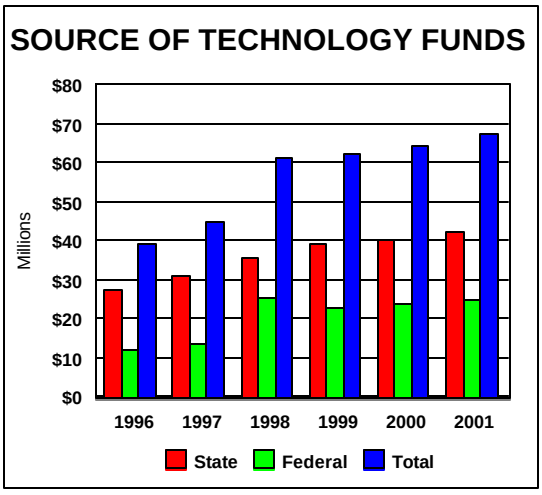
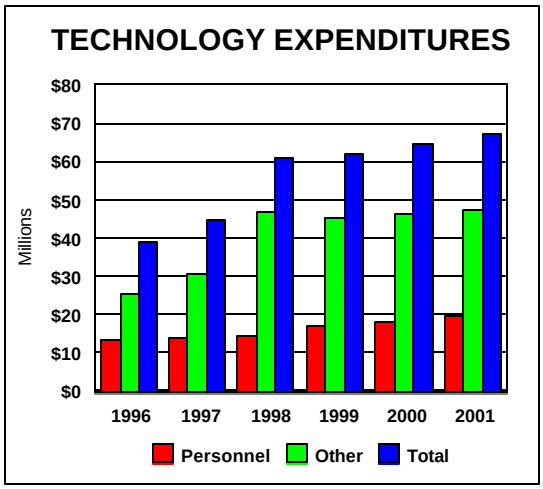
INFORMATION AND TELECOMMUNICATIONS TECHNOLOGY IN SIX FUNCTIONAL AREAS

Information and Telecommunications Technologies provide the tools to enable government to conduct and manage its operations more effectively and efficiently; to reorganize its business activities; and to better serve the interest of citizens, customers, and business partners. To take advantage of the opportunities provided, both the state and the federal government have increased their support for technology.



The State's total expenditures rose from $39 million in FY 1996 to $67 million in FY 2001. The State and federal contributions increased about the same dollar amount over the period but the State's share declining from 70% to 63% of the total. The increased use of innovative technologies and use of outsourcing is indicated by the 85% increase in capital and all other expenditures. Personnel expenditures increased by a smaller 47%.

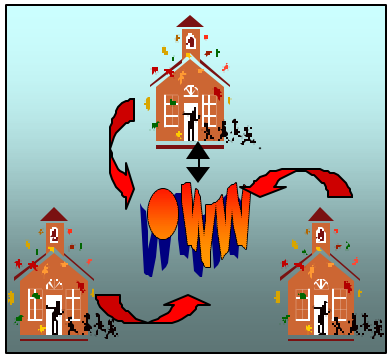


The accomplishment of the State, current initiatives, and future directions are discussed under six functional headings. These reflect infrastructure development; information, financial, and customer management; e-government; and security.

I. NETWORK INFRASTRUCTURE

To address the increasing importance of information technology for both the private sector and state and local governments, the State established the Maine Telecommunications and Information Technology Planning Project to support infrastructure development. In 1995 the Project summarized the importance of the effort:

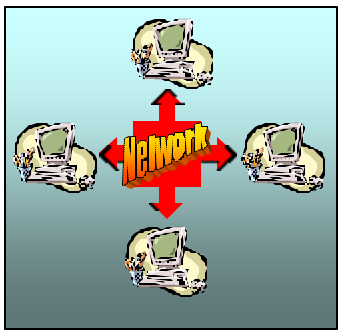
> Telecommunications are playing an increasing role in the exchange of information, flow of ideas, and provision of essential services in education, business, health care and government. These technologies will have a profound impact on all citizens in the state. They will connect Maine communities and their residents with each other and with the rest of the nation and the world, by voice, video, imaging, and data transmission.
>
> Every year, Maine's economy and the well being of its citizens become increasingly dependent on the creation, manipulation and transfer of information among ourselves and with the rest of the world. Access to an advanced telecommunications system is essential to ensure long-term strategic development of the state's economy and the quality of life of all its citizens.



To foster the development of this vision, the State accepted the Project's conclusion that the synergies to be derived from combining public and private investments would benefit all segments of Maine society. To take advantage of this synergy, the State used its investment in the State's WAN, School and Library Network, and Internet connectivity to encourage and leverage the private sector's development of a statewide telecommunications infrastructure. This private phone and cable company infrastructure provides a robust and redundant backbone for the development of both private and public sector communications networks. The development of robust state government and University of Maine System networks and the dramatic growth in call centers and other e-business activities in Maine are testimony to the success of this approach.

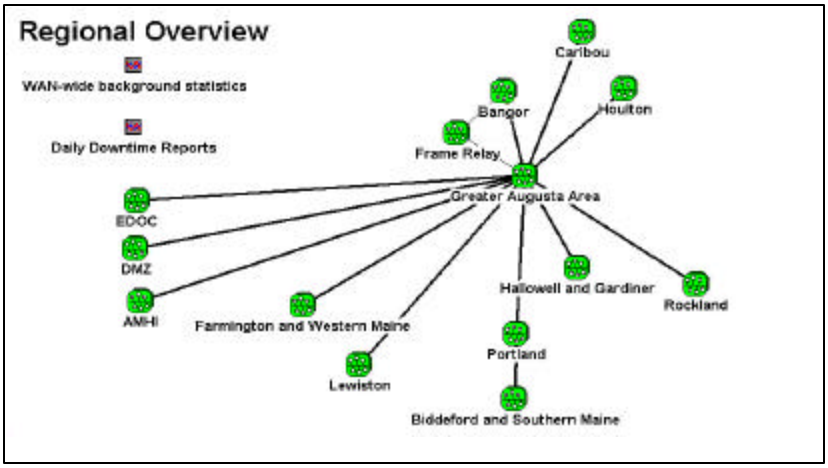
A. ACCOMPLISHMENTS:

State WAN and agency LANs



Building on a private statewide backbone, Maine state government has developed a robust network infrastructure of agency LANs connected to an enterprise wide WAN administered by the Bureau of Information Services (BIS). The network provides point-to-point connectivity for all users and devices in every agency in all three branches of Maine

state government. It connects central Augusta area agencies as well as agency branch offices and local government entities across the state. It supports an enterprise wide e-mail system and Internet connectivity.



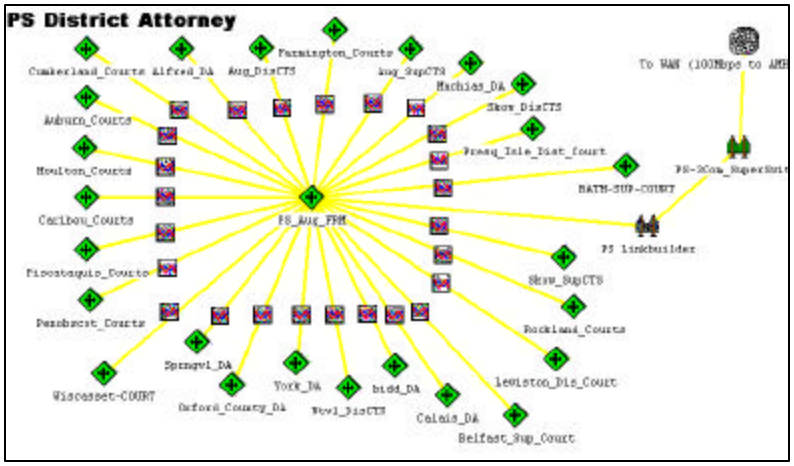
The network infrastructure is based on uniform standards established by the State's Information Services Policy Board (ISPB) for all executive branch and independent agencies of state government. The Legislative and Judicial branches utilize the State's enterprise WAN, e-mail system, and Internet connection and voluntarily comply with other standards.

State Building Renovations

The recent renovations at the State House, Burton M. Cross Building, AMHI Campus, Criminal Justice Academy, correctional facilities, and Department of Humans Services offices have all included installation of a state-of-the-art, high-speed, building telecommunications infrastructures.

Public Safety Network

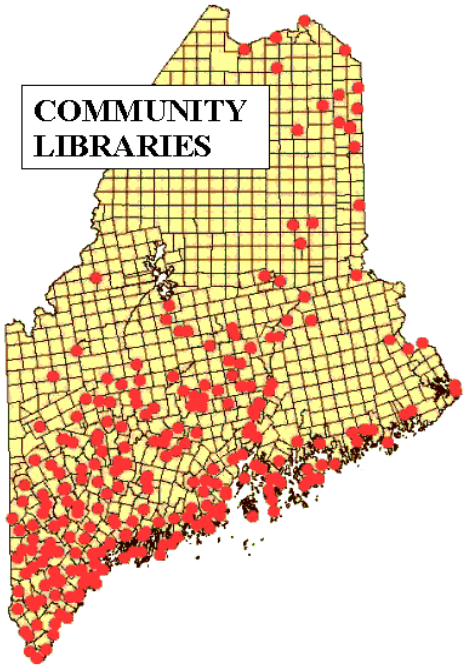
For compliance with federal (FBI) security requirements, the Bureau of Public Safety has a separate network, administered by BIS. The network connects State Police, County sheriffs, and 60 local police stations. It also links officers at the Maine Departments of Corrections, Marine Resources, and Inland Fisheries and Wildlife as well federal government agents across Maine. Through the network, police, sheriffs, and other law enforcement officers have access to Maine motor vehicle and criminal history records. They can also access information in other states and from federal government sources. Security issues currently inhibit the closer integration of the Public Safety network and the State's WAN.



Maine School and Library Network

Through its Maine School and Library Network (MSLN) Project, Maine became

the first state in the country to connect all public schools and libraries to the Internet. The MSLN is a joint State, UNET (University of Maine System network), and Verizon (formerly Bell Atlantic and NYNEX) sponsored initiative. The MSLN Project provides an array of services including:



- Internet Access
- Regional Network Routers and Dial-Up Hubs
- Network Monitoring
- Technical Support Services

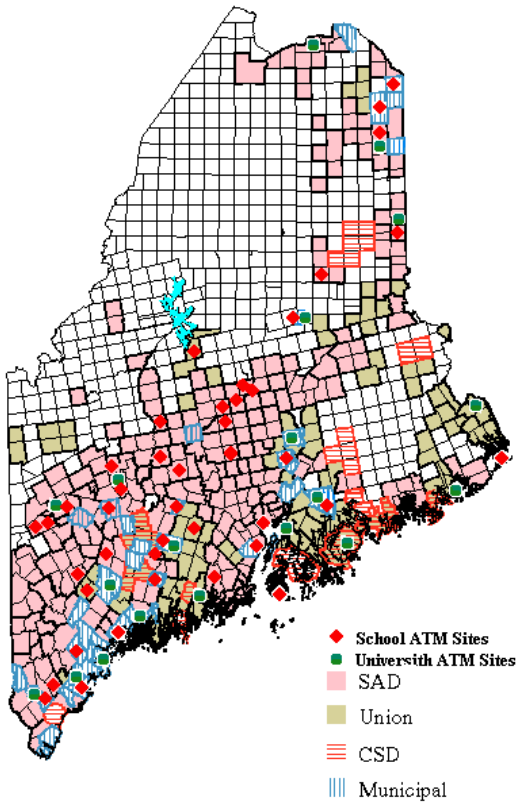
A Board of Advisors that reports regularly to the PUC governs the MSLN. Funding comes from Verizon, the federally enacted E-Rate program, and the Maine Public Utilities Commission's E-Rate initiative for intrastate calls.

Video Conferencing and Distance Learning

In 1995, Maine voters approved a $15,000,000 bond issue to pay for switching and routing and other ATM (Asynchronous Transfer Mode) network and video classroom equipment for public schools and selected libraries. The Department of Education established the Advanced Telecommunications for Maine (ATM) Project to coordinate the use of these funds with network development efforts of the Maine School and Library Network and the University of Maine System.

The effort has established high-speed data connections and two way video and audio transmission capacities at sites across the state and enabled the State's University System and public schools to develop Distance Learning initiatives. By the Fall 2001 term, the ATM Distance Learning Project will have 48 school and library sites toward their goal of 170 sites. The University System plans to offer ATM services at 10 campus sites by

ATM DISTANCE LEARNING SITES



the Fall and an additional 10 center and affiliated sites in the future. In addition to meeting the international standards for video and audio transmissions (MPEG2), the network provides for interoperability between MPEG2 and other standards based video applications such as the University's ITV system and ISDN transmissions. The network also has ample room for growth and the flexibility to adapt to future standards and technologies.

The public school sites and sites at the University of Maine campuses will provide interactive video connections for courses and also conferencing and training programs for state employees, teachers, and other public and private sector groups.

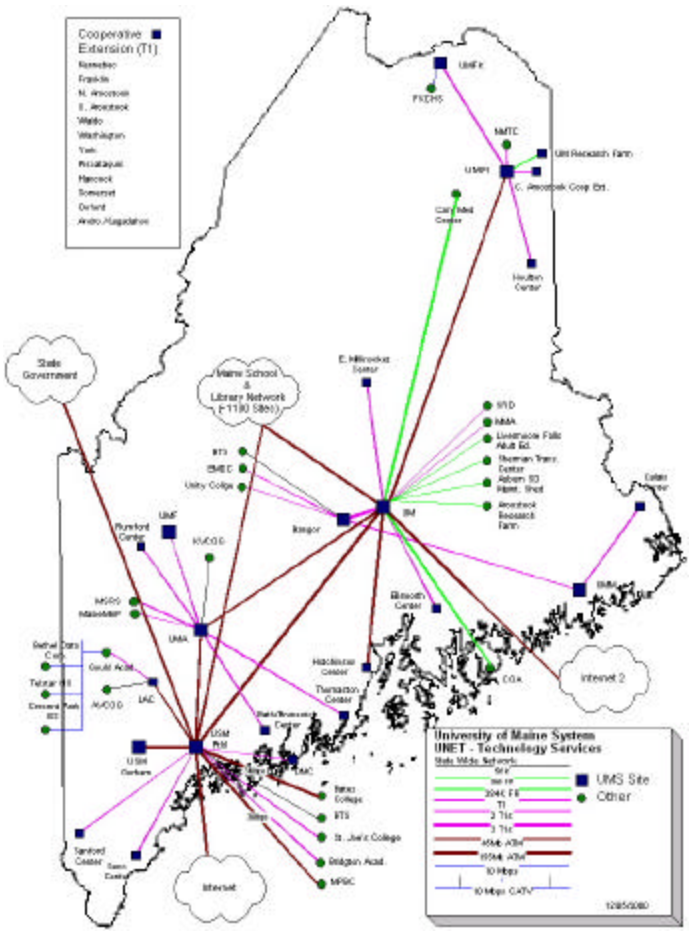
University of Maine System Network

The University of Maine System is a major player in the development of telecommunications networks in Maine. It has established UNET (University Network for Educational Technology Services) to connect individuals and offices within the University of Maine System, including satellite locations. UNET also manages the Maine School Library Network and the ATM Project initiative and acts as the State's Internet provider.

In addition, UNET has a Biotechnology Initiative to connect the University of Maine and the University of Southern Maine with private, non-profit research institutes (Jackson Laboratory and Maine Medical Research Institute). It has a similar initiative for Maine Sciences Connectivity. Finally, UNET actively participates in the development of Internet2.

The Internet

The connection of state agencies to the Internet provides access to other levels of government as well as to private sector entities and the general public. The Bureau of Accounts and Control and the State Treasurer can conduct transactions directly with financial institutions in the state and across the nation. The Departments of Human Services and Mental Health, Mental Retardation, and Substance Abuse Services can send and receive information necessary to monitor their contract with non-profit suppliers of services to clients. The Bureau of Medical Services has a real time connec-



tion with pharmacies for the monitoring of its prescription drug program under Medicaid. The Department of Labor has used the Internet to give its clients access to job opportunities with Maine employers and to national job banks.

Internet2

The University of Maine System has actively participated in the national Internet2 initiative. Intrernet2 will provide a separate network for universities, research centers, and government entities. This separate Internet2 network will allow for the high-speed transmissions of large data files, high-resolution graphics and video, and other information required by inter-institutional cooperative research projects. It will also isolate these institutions from the traffic overload caused by private sector use of the current, "original," Internet. Internet2 currently connects 181 universities plus federal government research offices.

B. CURRENT INITIATIVES

State's WAN

BIS is upgrading the State's WAN by installing routers and migrating away from its current bridged network design. Routing network traffic will make the WAN more efficient and eliminate traffic bottlenecks.

Windows 2000

BIS, in conjunction with the Information Services Managers Group, has embarked on a Windows 2000 enterprise planning effort. Upon implementation, Windows 2000 will help standardize and facilitate the interagency transmission of information services, establish an enterprise wide e-mail user name directory, support electronic commerce, and provide enhanced security options. BIS has established a test lab to gain experience. It expects to be ready to begin the implementation of Windows 2000 as agencies move into the remodeled Burton M. Cross Building in calendar year 2001. The Departments of Transportation and Environmental Protection are also planning the transition to Windows 2000 starting in FY 2002.

Maine School and Library Network

Current funding for the Maine School and Library Network (MSLN) expires in June of 2001. The Legislature enacted a new authorization for the PUC (35-A M. R.S.A. Section 7104-B) to establish a Telecommunications Education Access Fund. All carriers providing telecommunications services in the State will contribute to the fund. In combination with the federal E-Rate, the fund will be used to continue to provide schools and libraries discounts for telecommunications services, Internet access, internal connections, computers, and training under the renamed, MSLN2.

ATM and Video

The ATM Distance Learning Project has scheduled the addition of twenty-five new school sites in both FY 2001and FY2002. A total of 170 sites are planned. In addition, the University System is migrating its ITV system to the ATM network. The ATM and Video systems will be further enhanced by the $10 million General Obligation bond issue

passed by the voters in June 2000 for the development of digital TV broadcast capability by the Maine Public Broadcast Network (MPBN).

MPBN's entry into digital broadcasting will not just mean better quality pictures and sound, it will give viewers access to multiple, simultaneously broadcast programs. This "multicasting" will expand the educational programming to schools. In addition, it will allow the transmission of supporting information and enable teachers and students to delve deeper into the subject matter of a broadcast program. The full potential of the interactive capabilities of digital television are yet to be explored.

In addition, the Departments of Corrections and Mental Health, Mental Retardation, and Substance Abuse Services are installing ISDN lines at the State's prisons. The prisons will initially use the lines for video-medicine connections. The prisons and the courts can expand their use in the future.

Connecting State Police Cars to Critical Information

The State Police are piloting the installation of laptop computers in patrol cars with cellular network connections to the State's network. This will allow officers real-time access to Bureau of Motor Vehicle registration, licensing, and violation information and to information on Maine and national criminal history databases.

Maine Governmental Information Network Board

The Legislature established the Maine Governmental Information Network Board (5 MRSA, Chapter 17, §§ 353-357) to facilitate the development of a state and local government network. The intent is to facilitate and coordinate the growing number of state agency arrangements with local government units and public schools. It will take several years to implement a fully inclusive network incorporating all state agencies and county and municipal government offices.

C. FUTURE STRATEGIC DIRECTION

Maine will continue to expand its telecommunications infrastructure to insure the availability of high-speed and reliable voice, data, and video communications for all public and private users in the state. The state government will further integrate and expand the various public networks to meet the needs for secure communications among all state and local governmental agencies and the Maine University System's UNET.

Action Items:

- Link state and local government agencies in a secure, integrated network for voice, data, and video transmissions.
- Expand the telecommunications infrastructure to rural areas of the state.
- Make Interactive video conferencing available to public agencies and the private sector in all geographical areas of the state.